



000000	000000	TTTTTTTTTT	SSSSSSSS	MM	MM	UU	UU	LL	CCCCCCCC	DDDDDDDD	DDDDDDDD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SSSSSS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SSSSSS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
00	00	TT	SS	MM	MM	UU	UU	LL	CC	DD	DD
000000	000000	TT	SSSSSSSS	MM	MM	UUUUUUUUUU	UUUUUUUUUU	LLLLLLLL	CCCCCCCC	DDDDDDDD	DDDDDDDD
000000	000000	TT	SSSSSSSS	MM	MM	UUUUUUUUUU	UUUUUUUUUU	LLLLLLLL	CCCCCCCC	DDDDDDDD	DDDDDDDD

LL	IIIIII	SSSSSSSS
LL	IIIIII	SSSSSSSS
LL	IIIIII	SS
LL	IIIIII	SS
LL	IIIIII	SS
LL	IIIIII	SSSSSS
LL	IIIIII	SSSSSS
LL	IIIIII	SS
LLLLLLLL	IIIIII	SSSSSSSS
LLLLLLLL	IIIIII	SSSSSSSS

(2) 43  
(3) 46  
(4) 77

Edit History  
DECLARATIONS  
OTSSMULCD\_R3 - D COMPLEX\*16 Multiplication

```
0000 1 .TITLE OTSSMULCD - D COMPLEX*16 Multiplication Routine
0000 2 .IDENT /1-001/ ; File: OTSMULCD.MAR
0000 3 :
0000 4 :
0000 5 :*****
0000 6 :*
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0000 24 :*
0000 25 :*
0000 26 :*****
0000 27 :*
0000 28 :*
0000 29 :++
0000 30 :* FACILITY: Language-independent support library
0000 31 :*
0000 32 :* ABSTRACT:
0000 33 :*
0000 34 :* A routine to provide compiled code support for D COMPLEX*16
0000 35 :* multiplication.
0000 36 :*
0000 37 :* ENVIRONMENT: User Mode, AST Reentrant
0000 38 :*
0000 39 :--
0000 40 :* AUTHOR: Steven B. Lionel, CREATION DATE: 13-July-1979
0000 41 :*
```

F 7  
- D COMPLEX\*16 Multiplication Routine 16-SEP-1984 01:54:02 VAX/VMS Macro V04-00  
Edit History 6-SEP-1984 11:27:39 [MTHRTL.SRC]OTSMULCD.MAR;1 Page 2 (2)

0000 43 ; 1-001 .SBTTL Edit History  
0000 44 ; 1-001 - Original. SBL 13-July-1979

```
0000 46 .SBTTL DECLARATIONS
0000 47 :
0000 48 : INCLUDE FILES:
0000 49 :
0000 50 :
0000 51 :
0000 52 : EXTERNAL DECLARATIONS:
0000 53 :
0000 54 .DSABL GBL ; Prevent undeclared
0000 55 ; symbols from being
0000 56 ; automatically global.
0000 57 :
0000 58 :
0000 59 : MACROS:
0000 60 :
0000 61 :
0000 62 :
0000 63 : EQUATED SYMBOLS:
0000 64 :
0000 65 :
0000 66 :
0000 67 : OWN STORAGE:
0000 68 :
0000 69 :
0000 70 :
0000 71 : PSECT DECLARATIONS:
0000 72 :
00000000 73 .PSECT _CTSSCODE PIC, USR, CON, REL, LCL, SHR, -
0000 74 EXE, RD, NOWRT, LONG
0000 75
```



0009 129 : Complex multiplication is defined as:  
0009 130 :  
0009 131 : real part =  $ac - bd$   
0009 132 : imaginary part =  $ad + bc$   
0009 133 :-  
50 14 AC 04 AC 65 0009 134 MULD3 a(AP), c(AP), R0 : R0-R1 = ac  
54 1C AC 0C AC 65 000F 135 MULD3 b(AP), d(AP), R4 : R4-R5 = bd  
52 1C AC 04 AC 65 0015 136 SUBD2 R4, R0 : R0-R1 = ac-bd  
54 14 AC 0C AC 65 0018 137 MULD3 a(AP), d(AP), R2 : R2-R3 = ad  
52 54 60 0024 139 MULD3 b(AP), c(AP), R4 : R4-R5 = bc  
04 0027 140 ADDD2 R4, R2 : R2-R3 = ad+bc  
0028 141  
0028 142 RET : Return with product in R0-R3  
.END

A = 00000004  
 B = 0000000C  
 C = 00000014  
 D = 0000001C  
 MTHSSJACKET HND \*\*\* X 01  
 OTSSMULCD\_R3 0C000000 RG X 01

! Psect synopsis !

PSECT name	Allocation	PSECT No.	Attributes
ABS	00000000 ( 0.) 00 ( 0.)	NOPIC USR	CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
_OTSSCODE	00000028 ( 40.) 01 ( 1.)	PIC USR	CON REL LCL SHR EXE RD NOWRT NOVEC LONG

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	30	00:00:00.09	00:00:00.78
Command processing	120	00:00:00.78	00:00:04.96
Pass 1	83	00:00:00.62	00:00:02.94
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	41	00:00:00.46	00:00:02.56
Symbol table output	2	00:00:00.02	00:00:00.09
Psect synopsis output	2	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	280	00:00:02.02	00:00:11.46

The working set limit was 900 pages.

2250 bytes (5 pages) of virtual memory were used to buffer the intermediate code.

There were 10 pages of symbol table space allocated to hold 6 non-local and 0 local symbols.

202 source lines were read in Pass 1, producing 11 object records in Pass 2.

1 page of virtual memory was used to define 1 macro.

! Macro library statistics !

Macro library name	Macros defined
\$_255\$DUA28:[SYSLIB]STARLET.MLB:2	0

0 GETS were required to define 0 macros.

There were no errors, warnings or information messages.

MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LISS:OTSMULCD/OBJ=OBJ\$:OTSMULCD MSRC\$:\_MTHJACKET/UPDATE=(ENHS:\_MTHJACKET)+MSRC

0264 AH-BT13A-SE  
VAX/VMS V4.0

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